



State of Utah

DEPARTMENT OF ENVIRONMENTAL QUALITY DIVISION OF WATER QUALITY

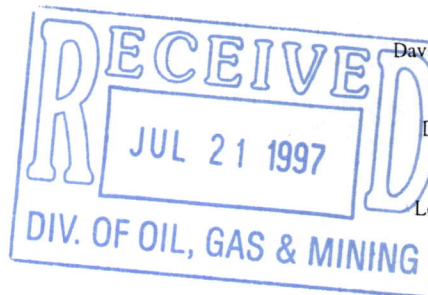
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July 18, 1997



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Mr. Ed King
Jumbo Mining Co.
6305 Fern Spring Cove
Austin, TX 78730

Dear Mr. King:

Subject: Ground Water Discharge Permit Application

We received a ground water discharge permit application for Jumbo Mining on July 10, 1997. Since the draft permit for these facilities was first developed in 1991, several matters have arisen regarding this site which we feel should be addressed when the final permit is issued.

Construction permits are now issued concurrently with ground water discharge permits, so other issues related to ground water protection must be resolved before permit issuance. Jumbo Mining has pursued a construction permit for the Drum Mine project for several years. However, there are still some plans and specification details yet to complete. A construction permit expires one year from the date of issuance. Therefore without diligence the permit could easily expire.

To obtain a construction permit for a new heap leach pad and pond remediation, we anticipate that a final set of plans and specifications will need to be submitted which addresses all outstanding issues. These issues include, but are not limited to:

1. Submittals regarding previous correspondence as stated in DWQ letter of January 8, 1997.
2. Submittals required with respect to letter of January 30, 1996. The letter regards electronic and other leak detection required for ponds and pads.
3. Completion of submittals with respect to DWQ letter of January 17, 1996. Partially fulfilled by Jumbo Mining submittal of October 15, 1996.
4. A final QA/QC plan as per DWQ letter of July 9, 1992. Some previous work has been done.
5. DWQ letter of June 23, 1992 requesting plans for process ponds.
6. DWQ letter of May 13, 1992 regarding flood control routing and calculations for the new pad area.
7. Any miscellaneous items essential to conform with the new draft guidance for design of Heap Leaching Facilities dated March 31, 1997.

The process water ponds at this site are facilities which could cause a discharge of contaminants to ground water and will be regulated under the permit. Because ground water monitoring is not



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feasible at this site, construction of the ponds must include a leak detection system. Monitoring the sump of this system will be a requirement under the ground water discharge permit.

As part of this project Jumbo is anticipating to mine additional ore at the site. This also could potentially cause a discharge of contaminants to ground water. Representative samples of the mined material must be evaluated through a program of testing for both acid-forming potential and release of dissolved contaminants under simulated conditions of precipitation and weathering. If any mined material shows the potential for release of acid or other contaminants, a management plan must be developed to eliminate or neutralize these potential discharges when the mined material is placed in waste dumps.

A problem had been identified earlier with cyanide and metal contamination in a shallow perched aquifer near the leach pad site. In a letter of September 25, 1991, we approved a plan to produce contaminated water from this aquifer with an interceptor trench and use it as process water for a new leach pad. Because all mining operations have ceased at the site since then, this system was never implemented. Also, properly-constructed monitor wells have never been installed in this aquifer to get valid samples for evaluating the level of contamination. As the new leach pad is constructed you must either implement the plan for producing water from the perched zone as per the September 25, 1991 letter, or install properly-constructed monitor wells as part of a study plan to demonstrate that remaining contamination in the aquifer is below the ground water standards in Table 1 of the Ground Water Protection Regulations (UAC R317-6).

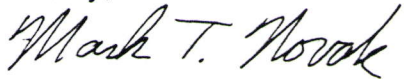
All leach pads on the site must be closed and reclaimed in such a manner that contaminants are not discharged from them. A conceptual closure plan must be included in the permit. For the new pads, this will involve rinsing the ore material until the leachate meets acceptable standards, then reclaiming and revegetating the pads in compliance with standards required by the Division of Oil, Gas and Mining and the Bureau of Land Management. Different procedures must apply if any ore remains on the old leach pads for which Jumbo has reclamation responsibility. For these pads, the liners have deteriorated to the point where we have been unable to obtain a valid sample to determine whether the leachate could cause a discharge of contaminants. If you leave any leached ore on these older pads, its potential for causing an unacceptable discharge must be evaluated by obtaining representative samples and testing them with a synthetic precipitation leaching procedure. Based on the results of this testing, an appropriate closure plan to minimize any discharges from the old leach pads can be developed. It is possible that this would not involve any additional capping beyond the requirements of DOGM and BLM.

The HELP model can be used to justify a particular configuration of liners, caps, and ore or waste rock materials. The model, however, is designed for use with engineered landfill components and waste materials. It should not be used for bedrock formations as you have done in your permit application, because these are not granular media and their properties are not well-known or properly simulated by the model. The performance estimate which can best be used to justify a particular configuration of landfill components would be the volume of water which passes through the lowermost engineered liner of the facility.

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Please respond to these comments within 30 days. If you wish, you can propose language for the permit which will insure that these goals are met. We could also prepare a draft permit containing these provisions and submit it to you for your review. Please contact me if you have any questions.

Sincerely,



Mark Novak, Environmental Scientist
Ground Water Protection Section

MN:mtn/fb

cc: Central Utah Health Dept.
Roger Foisy, District Engineer
Wayne Hedberg, DOGM
Sheri Wysong, BLM Fillmore Office
David A. Rupp

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